

## Remarks

### I. Introduction

Claims 1-7 are pending in this application. By this amendment, claims 1 and 7 are amended to further define the invention. Reconsideration in view of the foregoing amendment and following remarks is respectfully requested.

### II. Claim Rejections

Claims 1-7 stand rejected under 35 U.S.C. § 112, 1<sup>st</sup> paragraph. In particular, the Examiner asserts that it is unclear how an object is located using inverse multilateration. Applicants have amended independent claims 1 and 7 to overcome this rejection. Multilateration, also known as hyperbolic positioning, is a technique for locating an object with precision by measuring the time difference of arrival of a signal emitted from the object to three or more receivers. In the context of this specification and claims, the process is defined at several places in the specification. For example, starting at paragraph [0068], the specification states:

Methods of implementing an Inverse Multilateration computation in accordance with embodiments of the invention can be summarized as follows. As the mobile detection system (e.g., airplane 2610) moves along a curve, the receiver onboard the mobile detection system collects the arrival times of the pulses from the ground-based transmitting sensor and the position of the detection system at each time of arrival. Then the position of the ground transmitter is computed by solving

$$\bar{v}_1 = (A_1^T Q^{-1} A_1)^{-1} A_1^T Q^{-1} \cdot b_1.$$

Of course, once the position of the ground transmitter is known, the relative position of the mobile detection system 2610 with respect to the transmitter may also be computed.

Paragraphs [0042] to [0067] also describe the process of determining location by inverse multilateration with even more specificity. In the context of the claims, claim 1 has been amended to recite a four step process: (1) receiving signal pulses from a transmitting object at a mobile detection device, (2) calculating a slant range between the transmitting object and the mobile detection device, (3), calculating a position vector of the transmitting object based at least in part on the slant range, the position vector specifying the position of the transmitting object, and (4) calculating the location of the mobile detection device relative to the position of the transmitting object. As discussed in the specification, once the position vector is calculated, the position of the transmitting object is known. Thus, calculating the location of the mobile detection device (the receiver or the moving object) is relatively simple.

Thus, Applicants submit that the claims are enabled and respectfully request that the rejection of the claims be withdrawn.

### III. Conclusion

Applicants submit that this application is in condition for allowance. Should the Examiner believe that anything further would be necessary to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

In the event any variance exists between the amount authorized to be charge to the Deposit Account and the Patent Office charges, please charge or credit any difference to the undersigned's Deposit Account No. 50-0206.

Respectfully submitted,

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